Location/Identification

MINFILE Number: 092HSW125
National Mineral Inventory Number: 092H5,6 Ni1
Name(s): **GIANT MASCOT**
GIANT NICKEL, CHOATE

Status: Past Producer
Mining Method Underground
Regions: British Columbia
BCGS Map: 092H043
NTS Map: 092H06W
Latitude: 49 29 01 N
Longitude: 121 29 05 W
Elevation: 1300 metres
Location Accuracy: Within 500M
Mining Division: New Westminster
Electoral District: Yale-Lillooet
Resource District: Chilliwack Forest District
UTM Zone: 10 (NAD 83)
Northing: 5482322
Easting: 609752
Comments: Located along Stulkawhits Creek near Choate (part of Giant Nickel mine (092HSW004)).

Mineral Occurrence

Commodities: Nickel, Copper, Chromium, Cobalt

Minerals
Significant: Pyrrhotite, Pentlandite, Chalcopyrite, Magnetite, Chromite
Associated: Olivine, Enstatite, Hypersthene
Alteration: Limonite
Alteration Comments: Limonite occurs in narrow sinuous veinlets that cut both sulphide and gangue minerals.
Alteration Type: Oxidation
Mineralization Age: Lower Cretaceous

Isotopic Age: 95-120 Ma
Dating Method: Potassium/Argon
Material Dated: Hornblende

Deposit
Character: Massive, Disseminated
Classification: Magmatic, Industrial Min.
Type: M02: Tholeiitic intrusion-hosted Ni-Cu

Host Rock

Dominant Host Rock: Plutonic

Stratigraphic Age	Group	Formation	Igneous/Metamorphic/Other
Lower Cretaceous	------	------	Pacific Nickel Complex
Mesozoic	------	------	Unnamed/Unknown Informal

Isotopic Age	Dating Method	Material Dated
95-120 Ma	Potassium/Argon	Hornblende
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Lithology: Hornblende Pyroxenite, Peridotite, Diorite, Quartz Diorite, Norite, Hornblendite

Geological Setting

Tectonic Belt: Coast Crystalline
Physiographic Area: Fiord Ranges (Southern)
Terrane: Plutonic Rocks, Undivided Metamor

Metamorphic Type: Contact, Regional

Inventory

Ore Zone: SAMPLE
Year: 1987

Category: Assay/analysis

Report On: N

NI 43-101: N

Sample Type: Chip

Commodity	Grade
Chromium	1.2800 per cent
Copper	0.4300 per cent
Nickel	0.8300 per cent

Comments: Sample JR-86-9.

Reference: Assessment Report 16553.

Capsule Geology

The Choate property lies within an ultrabasic complex between the southern tip of the Coast Plutonic Complex and the northern end of a belt of intrusions termed the Chelan batholith. The intrusive rocks within this belt are granites, granodiorites and quartz diorites of Jurassic age and younger. They form the core of an uplifted block of regionally metamorphosed upper Paleozoic rocks which trend north, and are bounded by the Fraser River fault system on the east and west by somewhat less metamorphosed Mesozoic rocks.

The ultramafic complex hosting the Giant Nickel mine (092HSW004) mineralized zones is composed of hypersthene diorite and quartz diorites, norites and ultrabasic rocks, termed the Pacific Nickel Complex, which intrudes schists and earlier intrusive rocks. The older, noritic rocks are found northwest and southwest of the ultramafic complex. Potassium-argon ages from the ultramafic complex range from about 120 to 95 million years. The older ages were obtained from the hornblende pyroxenite phase with late hornblende dikes having the youngest ages.

The ultramafic rocks of the Pacific Nickel Complex form an irregular stock-like mass about 3.0 kilometres across. The northeast half of the stock consists of barren pyroxenites and peridotites which contain little or no hornblende. The southwest half of the stock is a highly variable, hornblende-rich assemblage of peridotites and pyroxenites which are mineralized and contain some seventeen orebodies associated with the Giant Nickel mine. These orebodies are scattered along a line trending about 285 degrees.

Mineralization occurs within the ultramafic rocks as pipe-like concentrations of enstatite, olivine and hypersthene containing pyrrhotite, pentlandite, chalcopyrite, magnetite with lesser amounts of chromite and cobalt minerals. In the deposits where the sulphides are relatively massive and comprise about 50 per cent of the rock, there is about four times as much pyrrhotite as pentlandite. Chalcopyrite, magnetite and chromite each make up about 2 to 3 per cent of the rock.

Magnetite and chromite occur as the principal metallic minerals in several places within nickeliferous bodies along Stulkawhits Creek near Choate. In particular, this type of mineralization is said to be located near the surface above the north end of the 512 foot crosscut of the No. 1 tunnel.

Both magnetite and chromite occur as small crystals or as rounded grains scattered throughout the sulphide bodies and the hornblende pyroxenite. Both minerals occasionally occur within the silicate minerals and were the first to crystallize from the magma. The concentration of magnetite and chromite either with the sulphide or in separate bodies at certain loci, can be explained as primary magmatic segregation. Limonite occurs in narrow sinuous veinlets that cut both sulphide and gangue minerals.

In 1936, 18 samples of ore were taken by the Mines Branch from several different sulphide bodies and analysed an average of 18.38 per cent iron, 1.89 per cent nickel, 0.14 per cent cobalt, 0.31 per cent chromium, 10.87 per cent sulphur, 0.7 per cent copper and only a trace of arsenic (Minister of Mines Annual Report 1936, page F64).

In 1987, 63 rock samples were collected and all were anomalous for chromium with assays up to 1.28 per cent (Assessment Report 16553).

Production is included with Pride of Emory (092HSW004).

Bibliography

EM EXPL 2000-25-32; 2002-29-40,65-80

EMPR AR 1924-137; 1928-227; 1929-239; 1930-204; 1934-F17-F19; 1935-F58; 1936-F64; 1937-F37; 1952-208; 1953-158; *1954-160-163; 1957-66; 1958-55; 1959-124-127; 1960-87; 1961-86-88; 1962-91; 1963-89; *1964-137-142; *1965-213-217; 1966-58; 1967-63; 1968-76

EMPR ASS RPT 5385, *16553

EMPR FIELDWORK *2001, pp. 211-236; 2002, pp. 115-128

EMPR GEM 1969-196; 1970-248; 1971-267; 1972-117; 1973-131,132; *1974-105-113

EMPR PF (Pride of Emory, Giant Nickel Mine, 092HSW004)

EMR MP CORPFILE (B.C. Nickel Mines Ltd.; Pacific Nickel Mines Ltd.; Western Nickel Mines Ltd.; Giant Mascot Mines Ltd.; Newmont Mining Corporation of Canada Ltd.; Granby Mining Company Ltd.)

GSC MAP 12-1969; 737A; 1008A
GSC MEM *190, pp. 1-15,Fig.1
GSC P *36, pp. 4-6; 69-47, pp. 63,64; 72, pp. 53-97
GSC SUM RPT *1924A, pp. 100-105; *1933A, pp. 53-97
CANMET IR No.763, 1935, p. 320; No.688, 1936, pp. 43-82
CIM *Vol. 2, 1957, pp. 27-36
ECON GEOL *Vol. 51, 1956, pp. 448-481
W MINER *Vol. 44, 1971, pp. 23-61; Vol. 42, No. 6, June 1969, pp. 40-46; Vol. 33, Nov. 1960, pp. 39-42
Muir, (1972): A Study of the Petrology and Ore Genesis of the Giant Nickel 4600 Orebody, Hope, British Columbia, Unpublished M.Sc. Thesis, University of Toronto, Apr. 1972
EMPR PFD 9429, 820914, 883358, 880814, 880816, 882678, 882679, 826793, 600097, 802381, 676912, 896718, 520633, 520634, 520635

Date Coded:	1985/07/24	**Coded By:**	BC Geological Survey (BCGS)	**Field Check:**	N
Date Revised:	1988/02/28	**Revised By:**	Laura L. Coughlan (LLC)	**Field Check:**	N